

Review: Chapter 14+15

1.
 - a. $(.25)^3 = .0156$
 - b. $.25 + .15 = .4$
 - c. $1 - [P(\text{not blue})] = 1 - (.7^4) = .7599$
 - d. $.85$

2. The outcome of the first event does not affect the outcome of the other event. $P(B|A) = P(B)$

3. The events have no outcomes in common. If A occurs, then B cannot occur. $P(A \cap B) = 0$

4. Set up chart to help \rightarrow

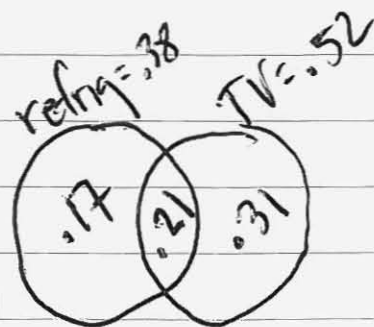
	male	female	
dog	8	16	24
Cat	6	12	18
	14	28	42

- a) $P(m|c) = \frac{1}{3}$
- b) $P(c|f) = \frac{12}{28} = \frac{3}{7} \approx .43$
- c) $P(f|d) = \frac{16}{24} = \frac{2}{3} \approx .67$

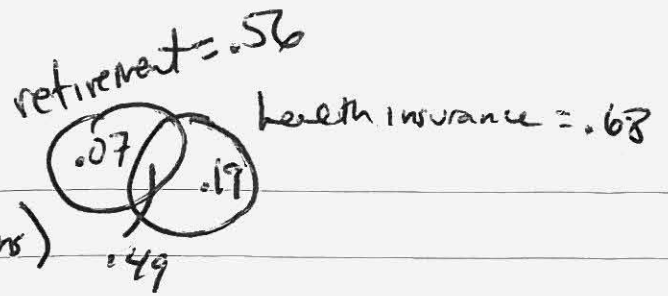
5. Set up Venn diagram \rightarrow

- a. $.31$
- b. $.48$

c. $1 - (P(\text{refng or TV}))$
 $1 - .69 = .31$



6 a. $1 - P(\text{have retirement or health ins})$
 $1 - .75 = .25$



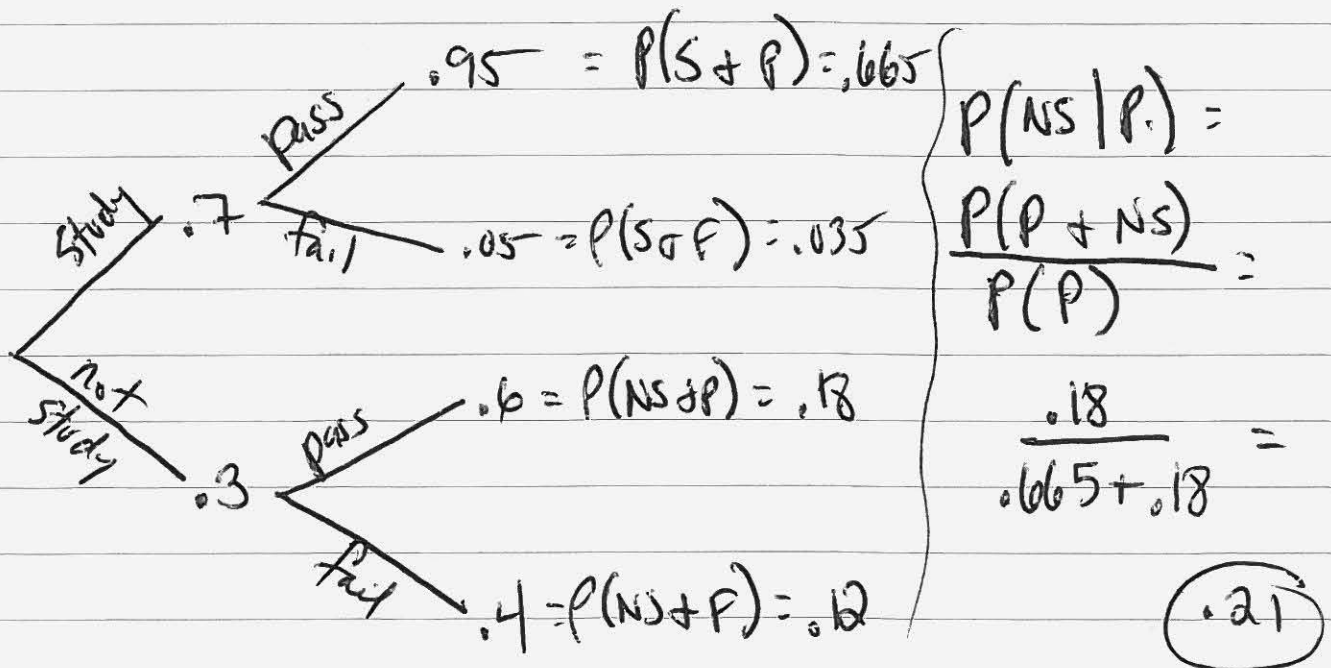
b. $P(\text{HI} | \text{retirement}) = \frac{P(\text{retirement} + \text{HI})}{P(\text{retirement})}$
 $= \frac{.49}{.56} = .875$

c. $P(\text{HI} | \text{Ret}) \stackrel{?}{=} P(\text{HI})$
 $\frac{.49}{.56} = .68$

< not equal, therefore, not independent.

d) Not disjoint, there is overlap. $P(\text{HI} + \text{Ret}) = .49$

7.



$$8 \quad a) P(A \text{ or } Red) = P(A) + P(Red) - P(A \text{ and } Red) \\ = \frac{4}{52} + \frac{26}{52} - \frac{2}{52} = .54$$

$$b) P(2 \text{ Aces}) = \frac{4}{52} \cdot \frac{3}{51} = \frac{12}{2652} = .005$$

$$c) P(\text{Heart} | Red) = \frac{P(Red \text{ and } Heart)}{P(Red)} = \frac{\frac{1}{4}}{\frac{1}{2}} = \frac{1}{2}$$